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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,528	06/30/2003	Phillip Joe Brock	HSJ920030008US1	2169

7590 12/27/2005
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EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,528

Applicant(s)

BROCK ET AL.

Examiner

Justin R. Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-19 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12904.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of a method involving an epoxy binding material and NMP as the solvent in the reply filed on October 7, 2005 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 9, 10, 13, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai (US 6,922,890) and further in view of Saenger (US 4,576,902) and Barford (US 4,460,490). Dai substantially teaches the method of the claimed invention, including positioning sliders 18 on an adhesive surface 28, placing a protective film 16 on the slider, binding the slider in a matrix 14, performing an air-bearing patterning step ("selected process"), and removing the protective film and matrix material via solvent application (NMP) (Figures 4-7 and Columns 6 and 7). The reference, however, is silent as to the specific use of PVA as the protective film material and thus necessarily fails to suggest the formation of such a layer by applying the PVA in a solvent and subsequently drying of the solvent. The reference does teach, though, that the protective film is formed of a material that is chemically inert to the heating conditions in which the binder material becomes flowable, such as polyethylene (Column 6, Lines 40-50 and Column 7, Lines 25-27). One of ordinary skill in the art at

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the time of the invention would have found it obvious to form the protective layer of Dai from PVA since such a material is commonly used to form protective films and more particularly, such a material is recognized as being used as an equivalent alternative to polyethylene films, as shown for example by Saenger (Column 3, Lines 34-60). In this instance, such a disclosure suggests that PVA provides suitable protective characteristics and is sufficiently inert, as compared to polyethylene. It is emphasized that Saenger recognizes the use of a polyethylene film, which is disclosed in an exemplary manner by Dai, or an aqueous solution of PVA, which is required by the claimed invention. Barford (Column 8, Lines 30-45) is additionally applied to evidence the known use of PVA films or aqueous solutions of PVA to form protective films. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the protective film of Dai from an aqueous solution of PVA (solvent would be dried off as detailed in Saenger).

As to claim 2, Dai discloses the use of PGMEA after the etching step in the air-bearing patterning step (Column 7, Lines 25-30).

With respect to claim 9 and 18, solvents are commonly driven from an aqueous solution by drying or evaporation, as shown for example by Saenger (Column 3, Lines 34-60). In such an instance, the slider would be exposed to multiple temperatures (e.g. slight variation in heating vessel or medium) and such a method would satisfy the claimed invention. The claim as currently drafted only requires that the slider is baked at a first and second temperature.

As to claim 10 and 19, Dai teaches the use of NMD.

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4. Claims 3, 4, 6, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai, Saenger, and Barford as applied in claim 1 above, and further in view of Krezanoski (US 3,911,107). As to the particular type of PVA, several of the well known PVA's have a percentage hydrolysis in accordance to the limitations of the claimed invention, as shown for example by Krezanoski (Column 4, Lines 10-35). It is further noted that the reference recognizes the known relationship between the percentage hydrolysis and the properties of the PVA, further suggesting that it would have been within routine experimentation to determine the percentage hydrolysis necessary to provide a suitable protective film. Lastly, applicant has not provided a conclusive showing of unexpected results to establish a criticality for a PVA having a percentage hydrolysis greater than 95%- it is emphasized that such a percentage hydrolysis appears to be consistent with commonly used PVA's.

With respect to claims 6 and 16, the broad range of molecular weights is consistent with commonly used PVA's and as such, one of ordinary skill in the art at the time of the invention would have found it obvious to use a PVA having the claimed molecular weight. In this instance, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed molecular weight.

5. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai, Saenger, and Barford as applied in claim 1 above and further in view of the Admitted Prior Art (Page 1, Lines 25-35). In describing the matrix material, Dai references prior art methods and suggests that acrylate encapsulates were used but were difficult to remove because they are insoluble in organic solvents and bond well to

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the slider substrate (Column 2, Lines 55+). It is evident, though, that the method of Dai provides a protective film that eliminates any bond with the slider substrate.

Additionally, while difficult, previous methods using an acrylate encapsulate were carried out. As such, it is evident that acrylate encapsulates represent a common material in similar methods and absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use any of the well known materials. It is additionally noted that the Admitted Prior Art recognizes the known use of epoxy encapsulates in similar methods. Thus, acrylates and epoxy materials appear to represent common "encapsulate" materials and one of ordinary skill in the art at the time of the invention would have readily appreciated their use in the method of Dai.

6. Claims 7, 8, 12, 17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai, Saenger, and Barford as applied in claim 1 and further in view of Minemoto (JP 57090061). As noted above, Saenger and Barford recognize the use of aqueous solution of PVA to form a protective film. In this instance, Saenger specifically describes such a method as representing an alternative to the use of a preformed film, such as polyethylene, which is suggested by Dai. In regards to the solvent, Minemoto evidences the well known use of water and/or isopropanol in PVA solutions. One of ordinary skill in the art at the time of the invention would have found it obvious to use such a solvent since it is consistent with the methods commonly used with aqueous solutions of PVA.

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Regarding claims 12 and 21, it is generally well known that solvents can include a water component, as shown for example by Minemoto. In Dai, the relevant solvent is the same as that of the claimed invention, hot NMP (Column 7, Lines 35-40). One of ordinary skill in the art at the time of the invention would have found it obvious to include water since it is well known to form solvents with or without a water component- in this instance, since the disclosed solvent is hot NMP, one of ordinary skill in the art at the time of the invention would have found it obvious to include hot or boiling water. It is further noted that Minemoto recognizes that water can be used solely as the solvent component.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script that reads "Justin Fischer".

Justin Fischer

December 21, 2005